STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
Division of Aquatic Resources
Honolulu, Hawaii

January 28, 2005

Board of Land and
Natural Resources
State of Hawaii
Honolulu, Hawaii

REGARDING: Request for Approval of Marine Protected Area and Marine Managed Area Definitions and Framework, in Concept, and Authorization to Conduct a Public Process to Develop a Marine Managed Area Policy

INTRODUCTION

Comprehensive Coastal Policy

It is an objective of the Department of Land and Natural Resources to foster a Statewide Comprehensive Coastal Policy to improve overall management of coastal resources. This effort is intended to produce a unified vision for future actions by government as a whole.

Rather than confront the daunting task of an overall, comprehensive policy in a single effort, the proposed policy can be broken down into component "Chapters" and the respective stakeholder groups can address each chapter.

Coastal Policy encompasses many different and complex issues. Because of these issues, we are proposing that the proposed management initiatives be integrated within "Chapters" and "Sub-Chapters" of the overall Coastal Policy.

The proposed Marine Managed Area framework outlined below will be considered as a part of the Chapter on Nearshore Water Concerns in the Sub-Chapter on Marine Ecosystem Management.

MARINE MANAGED AREA BACKGROUND

For nearly 40 years the State of Hawaii has been designating marine areas for special management. Many of the initial areas were designated for socio-economic reasons, including local community support, reducing conflicts between user groups, ease of public access, ease of establishing and marking boundaries, cultural value, and/or scenic beauty.

The prime criteria that were used to establish the Marine Life Conservation Districts (MLCDs) included:

1) significant resources – that the site supported abundant marine life, geological features that needed protection, etc;

2) that the site was in a relatively pristine state; and

3) that there was a future potential for the area to recover or flourish.

Additional criteria that were considered included:

4) ease of establishing boundaries (e.g. across the mouth of an embayment) and

5) ease of access to the resource for ocean recreation activities.

In contrast, the designation of Fisheries Management Areas (FMAs) was generally an attempt to reduce conflicts between user groups, including between groups using different types of fishing gear. Consideration of the habitat value for fisheries or ecosystem replenishment was not a priority in designating marine managed areas until recently.

In 2000, the Marine Protected Areas Executive Order 13158 was issued by President Clinton. This executive order defined a "marine protected area" to mean:

> "any area of the marine environment that has been reserved by Federal, State, territorial, tribal, or local laws or regulations to provide lasting protection for part or all of the natural and cultural resources therein."

The State has provided an inventory of all of its marine managed areas that meet the federal definition of marine protected area for inclusion in a national database. Conducting this inventory helped DLNR identify the broad range of resource management goals, programs, rules and risks to marine resources in the State's marine managed areas.

Over the past eight years, DLNR has addressed management issues at some of the marine managed areas and adapted their management on a case-by-case basis using best available science and community input. Although adaptive management will always be needed on a site-specific basis, the department recognized the broader concerns and decided in 2000 that the entire system of marine managed areas would benefit from this evaluation.

Need for a Framework

Two and a half years ago, the Division of Aquatic Resources (DLNR-DAR) hired a Marine Protected Area Coordinator on contract to evaluate the department's current system of marine managed areas and to develop a framework and new designation criteria that can be used to better manage our current sites and used as a tool in the consideration of designating potential new sites.

This review was intended to incorporate new research findings and management strategies in order to respond to declining aquatic resources and new socio-economic considerations. The proposed framework of categories and evaluation criteria were developed based on several sources of information.

A broad cross-section of Hawaii residents were interviewed to get their recommendations on how the State could improve the effectiveness of areas designated by DLNR to protect, enhance or conserve marine resources. The latest and most current literature was also reviewed and findings used in the development of the new management strategy.

This review focused on accomplishing the following goals:

- Develop a framework that includes several types of marine managed areas and site-evaluation criteria that provide DLNR with an objective and scientifically sound approach to evaluate existing marine managed areas and potential new sites.

- Specify the management goals and objectives of each type of marine managed area so that DLNR is able to monitor the degree to which the rules and on-site management programs achieve the goals and objectives. Monitoring the effectiveness of each type of area will enable DLNR to adapt their management if needed.

- Standardize the management goals and objectives for each category of marine managed area so the public can more easily understand and remember what they are allowed to do in each type of area. This should help with compliance and make enforcement easier.

- Designate each category with a name that accurately conveys the primary purpose of the special management area. It is important not to mislead the public into thinking marine waters outside of a marine managed area are not managed, because the statewide fishing regulations apply in this broader area. Furthermore, it is equally important to accurately communicate to the public the extent to which marine waters are managed exclusively for conservation purposes (e.g., Marine Refuge or Marine Reserve for preservation of biological and genetic diversity) versus for multiple use objectives (e.g., Marine Life Conservation District for conservation of marine resources and low-impact fisheries).

- Develop management categories and evaluation criteria that will allow DLNR to engage in a broadly-inclusive public process to evaluate existing marine managed areas against the new management framework to see what, if any, changes are needed in each area's regulations and in which category they best fit.

- Designate and effectively manage the diverse types of marine managed areas that complement the statewide fishing rules in order to protect, enhance and conserve marine ecosystems, habitats, aquatic species and biodiversity while contributing to the sustainability of fisheries and the quality of outdoor recreation.

METHODS USED TO EVALUATE EXISTING MARINE MANAGED AREAS

Interviews were conducted and were designed to learn from state and county resource managers and scientists, researchers at the various Universities, educators, and stakeholders.

Stakeholders included cultural practitioners, fishers, community associations, conservationists, ecotourism businesses, educators, and representatives of community groups.

Forty-two interviews were conducted from November 2002 through February 2003. Input provided by the legislatively-sponsored Hawaii Marine Protected Areas Working Group in 2002 from over 100 people from around the State was also considered.

After completing the interviews to benefit from a broad Hawaii perspective, the scientific literature was reviewed in order to include the latest information on the design, management, and effectiveness of different types of marine managed areas.

Several areas were visited to assess on-site management, quality of signage, ease of determining the boundaries, human uses of the areas and management challenges and opportunities.

Site visits included: Hanauma Bay MLCD; Waikiki MLCD; Old Kona Airport MLCD; Waikiki-Diamond Head Shoreline FMA; Coconut Island- Hawaii Marine Laboratory Refuge; Hilo Bay, Wailoa River and Wailuku River FMA; Kealakekua Bay MLCD; Lapakahi MLCD; Honolua-Mokuleia Bay MLCD; and Waiopae Tidepools MLCD.

A draft framework was circulated for initial peer review in March 2003. An updated draft was distributed for review in June and July 2003. From August 2003 to July 2004, the DLNR-DAR MPA Working Group discussed and refined the draft framework.

The DLNR-DAR Administrator and Program Managers reviewed and revised the framework in October 2004. The DLNR Chairman reviewed and revised the framework in Nov./Dec. 2004.

The gaps in our knowledge of marine resources require that every effort be made to collect all relevant information to score each criterion as accurately as possible. Several sources of information exist.

The Hawaii Marine Gap Analysis Project is compiling all available data relevant to the evaluation of sites and developing a Geographic Information System. The types of data being compiled include biological, benthic habitat, ecological, physical, sources of human impacts to marine resources, water quality, oceanographic, infrastructure, and location of existing marine managed areas.

The database resulting from this project should be useful in applying the criteria. The informed opinions of local experts (including regular users of the site), cultural practitioners, resource managers and scientists will also need to be used to score the criteria as accurately as possible.

A recent compilation of oral histories from Hawaiian elders (*kupuna*) contains valuable information about marine resources and their traditional uses in local areas (Kumu Pono Associates 2004). DLNR-

DAR is refining their survey protocols and will continue to monitor fish resources in some of the marine managed areas on an annual basis.

Scientists in Hawaii continue to research the habitat requirements and movement patterns of important species, much of it funded through the Hawaii Coral Reef Initiative Research Program.

PROPOSED ACTION:

DLNR's Division of Aquatic Resources (DLNR-DAR) seeks the authorization of the Board of Land and Natural Resources to pursue adopting the proposed definitions for marine protected areas and marine managed areas and to approve, in concept, the proposed framework for marine managed areas to better manage, conserve and protect our marine and coastal ecosystems and maintain healthy stocks.

This effort will be an integral component of the larger comprehensive Coastal Policy and represents a Sub-Chapter in this larger policy.

The DLNR-DAR further seeks the authorization of the Board of Land and Natural Resources for the division to conduct a public process, including holding public meetings, to further refine, review and discuss this proposed framework. This effort will begin with focused group meetings with stakeholders in each County and will include discussions with all affected agencies. DLNR-DAR will serve as the lead division and will report back to the BLNR with further recommendations.

DLNR has also been working to develop a draft definition of *"marine protected areas"* (MPAs), which are a subset of marine managed areas. DLNR suggests the following definition, patterned after the national Executive Order definition, for Marine Protected Area to be:

> "any area of the marine environment established by law or regulation to protect or enhance part or all of the natural and cultural resources therein."

Other marine areas that have special management rules to allocate fishery resources between user groups or to prevent gear conflicts with boats in harbors are also considered "*marine managed areas*". DLNR suggests the following definition for Marine Managed Area to be:

> "any area of the marine environment established by law or regulation that encompasses defined management objectives, including protection of geological, cultural or natural resources, or that reduces conflicts between and among user groups, and is not primarily for conservation purposes."

In most marine managed areas, the regulations are not specific enough to enable DLNR to analyze how effective the areas are in meeting their goals and objectives. This makes it difficult to know if or when DLNR should adapt their management program to better achieve the goals and objectives.

Few of the existing areas managed by DLNR within the same category (e.g., the 11 MLCDs) have the same goals and management objectives, or the same regulations permitting or prohibiting activities.

Significant variation is found in the regulation of commercial activities. In most cases, the variation is the result of the extensive community input process that was undertaken by DLNR to obtain community support for the designation of a particular site. In addition, the science (both biological and socio-economic) that is applied to assess the effectiveness of a particular site has changed and grown substantially since many of these sites were first designated.

Overview of Recommended Framework for Marine Managed Areas

The proposed framework includes six categories that provide a broad enough range of management goals to allow all existing designated areas to be evaluated and re-designated as the most appropriate category of marine managed areas.

Each category is defined by: 1) conservation, management objectives and human use guidelines; and 2) evaluation criteria to be used to determine the suitability of a site for designation as a category of marine managed area.

There is some overlap between categories as they are not mutually exclusive. For example, conflicts between fishing groups or gear types could be resolved by using either a Fishery Management Area or a Marine Life Conservation District. Which category would be most appropriate would depend on the level of ecological and habitat conservation that is desired.

Further discussions within the DLNR and with the public are needed to determine whether "lumping" or "splitting" the categories is the best approach. For example, an area to be managed primarily for subsistence fishing could be handled under the proposed Fishery Management Area category, or it could end up being a separate category called Subsistence Fishing Area.

Similarly, the West Hawaii Fish Replenishment Areas could remain a type of Fishery Management Area or become a separate category in the final management framework.

When applying the framework to an island or a stretch of coastline, several categories could be designated adjacent to each other to both conserve marine resources and resolve conflicts between the various types of public uses of aquatic resources along a stretch of coastline.

For instance, one large bay could have a Marine Reserve designated in the area most deserving of the highest level of protection, with the adjacent areas designated a Fishery Management Area to allocate aquatic resources between user groups.

This complementary zoning would increase the potential that the increased production of adults and/or larvae in the Marine Reserve would improve fishing in the Fishery Management Area. This may happen due to the greater reproductive capacity of larger adult fish that would occur in the Reserve, the migration of adults into the fishing area or the dispersal of larvae resulting in increased recruitment in the Fishery Management Area.

The evaluation criteria are intended to be used by DLNR as they work with the public to consider sites for designation as a particular category. The more fully the criteria for a category are met at a particular site, the more suitable that site is for management as that category.

SUMMARY OF PROPOSED FRAMEWORK

Possible Designated Areas

No "final" list of names has been determined, but we are proposing the following as possible designated areas (you will note that under these new names and goals, some exiting protected areas may need to be reclassified and/or relabeled:)

Marine Reserve

A **Marine Reserve** is an area designated for the primary purpose of restoring and/or preserving diverse assemblages of marine species at high population levels and representative natural habitats and ecosystems. These reserves are a natural resource asset for present and future generations and provide a baseline against which changes to less protected ecosystems can be measured. Extractive and commercial activities would be prohibited and a permit may be required for access.

An example of the type of area that would qualify under this category is Ahihi-Kinau Natural Area Reserve.

Marine Refuge

A **Marine Refuge** is an area designated to restore aquatic species to high levels, restore and conserve biodiversity, and reduce impacts to marine habitats and protected species. Most types of access would require a permit and both extractive and non-extractive activities would be severely limited.

An example of the type of area that would qualify under this category is the Northwestern Hawaiian Islands Marine Refuge.

Marine Park

A **Marine Park** is an area designated to restore and conserve biodiversity, ecosystem functions and aquatic species' populations at high levels in an environment that will also provide high quality recreational opportunities for the non-consumptive use of marine species.

Examples of the type of area that would qualify under this category include Hanauma Bay MLCD and Underwater Park, Waikiki MLCD, Pupukea MLCD, Kealakekua Bay MLCD Sub zone A, and Molokini Shoal MLCD Sub zone A.

Marine Life Conservation District

A **Marine Life Conservation District (MLCD)** is an area that is designated to restore populations to high levels and to minimize impacts from human activities while allowing multiple uses that do not degrade the habitat or impact the ecosystem. Under this definition, subsistence and cultural gathering may be a key activity.

Examples of the type of area that would qualify under this category include Manele/Hulapoe MLCD, Lapakahi MLCD, and Old Kona Airport MLCD.

Fishery Management Area

A **Fishery Management Area** is an area in which fishery resources are allocated between user groups (e.g., subsistence fishers, commercial fishers, non-consumptive users) and/or gear types (e.g., pole and line vs. gill net) in order to sustain aquatic resources and reduce conflicts between user groups. It is also is an area where certain specified fish harvesting activities are prohibited, where no fishing of reef-dwelling fish is allowed and other areas where anchoring and ocean recreation activities are restricted.

Examples of the type of area that would qualify under this category include most Fisheries Management Areas, Bottomfish Restricted Fishing Areas

Public Fishing Area

A **Public Fishing Area** is an area designated to improve the quality of fishing by prohibiting interference with fishing and by increasing fish stocks through habitat enhancement or fish stocking programs.

An area such as the Waiakea Public Fishing Area in Hilo is an example of an area that comes close to this category, given the prohibition on swimming, water skiing or immersion.

Evaluation Criteria Relevant to All Categories of Marine Managed Areas

We believe that any prospective managed area should have a moderate to high likelihood of achieving the specified management goals, assuming there would be adequate on-site management and enforcement. This evaluation is based on the best available information and considers the following criteria:

- The size and shape of the area, the species assemblages and habitat composition and quality appear sufficient to achieve the management goals.
- Proposed area is not so large such that fishers or other users of marine resources are denied access to and use of extensive nearshore marine waters.
- Geological and/or man-made features allow for well-defined boundaries that are legally enforceable.
- Good long-term administrative viability (i.e., the site and uses can be managed and rules can be enforced).
- High compatibility of the proposed managed area with adjacent upland zoning and current land uses.
- Cultural gathering rights and activities undertaken in the pursuit of traditional and customary practices will be incorporated at each site.
- Sites with submerged cultural resources (i.e. heiau) or historic artifacts (i.e. shipwrecks) be considered as marine managed areas.

Summary of Categories, Management Objectives and Site Criteria:

CATEGORY/ EXAMPLE	PRIMARY GOALS	CONSERVATION OBJECTIVES	SITE CRITERIA	HUMAN USE MANAGEMENT & OBJECTIVES	FISHING ACTIVITY PERMITTED	COMMERCIAL ACTIVITY PERMITTED
Marine Reserve Ahihi-Kinau NARS	Preservation	Protect important unique habitats Conserve protected species Conserve examples of valuable ecosystems Restore/conserve biodiversity Restore natural communities of species Restore natural size-class distributions Avoid human impacts to habitat	Critical spawning or nursery area High species biodiversity & abundance Habitat for rare, threatened, or endangered species Fragile habitat at risk from public use Remote unique habitats/species not currently protected Public access/use able to be restricted or managed Land-based pollution impacts negligible/manageable Preserve diverse assemblages of marine species and their habitats	Biological reference site for science Benefit adjacent fisheries if adult or juvenile fish move outside Reserve No Extractive uses/fishing No fish feeding or habitat alteration Commercial uses restricted Boats/anchoring may be restricted All public access may require permit No degrading uses	No	No
Marine Refuge NWHI Marine Refuge	Conservation	Protect important unique habitats Conserve protected species Conserve examples of valuable ecosystems Restore/conserve biodiversity Restore natural communities of species Restore natural size-class distributions Avoid human impacts to habitat	Critical spawning or nursery area High species biodiversity & abundance Habitat for rare, threatened, or endangered species Fragile habitat at risk from public use Remote unique habitats/species not currently protected Land-based pollution impacts negligible/manageable	Biological reference site for science Benefit adjacent fisheries if adult or juvenile fish move outside Refuge Extractive uses/fishing extremely limited No fish feeding or habitat alteration Commercial uses regulated/restricted by permit to benefit aquatic resources Boats/anchoring may be restricted All public access will require permit No degrading uses	Yes with Permit	Yes with Permit
Marine Park Hanauma Bay Molokini Shoal Kealakekua Bay	Conservation/ Recreation	Restore populations to high levels Restore/conserve biodiversity Restore/maintain ecosystem functions Reduce impacts to protected species Minimize human impacts to habitat	High non-consumptive recreation value Presence of species of special interest to public Adjoining areas compatible with proposed activities Habitat can withstand managed recreational use Could manage public use to minimize impacts Area suitable for public facilities Area highly suitable for wildlife viewing High species biodiversity & abundance	Limited recreation activities allowed No extractive uses/fishing No fish feeding or alteration of habitat Boats/anchoring may be restricted Benefit adjacent fisheries if adult or juvenile fish move outside Park Regulate commercial uses by permit to avoid impacts to resources or to other public uses in area Day-use moorings encouraged	No	Yes with Permit

Marine Life Conservation District (MLCD) Honolua Bay Manele/Hulapoe Waialea Bay	Conservation/ Multiple Use	Restore populations to high levels Restore/conserve biodiversity Minimize human impacts to habitat Minimize impacts to protected species	Low impact fisheries have not damaged habitat High species biodiversity & abundance, or potential Habitat can withstand low impact fishing & other uses Managed public use to minimize impacts	Low-impact fisheries by registration if don't degrade habitat/populations Some non-consumptive recreational allowed Boats/anchoring may be restricted No fish feeding or alteration of habitat Regulate commercial uses by permit to avoid impacts to resources or to public uses of resource	Yes with Permit	Yes with Permit
Fishery Management Area (FMA) Puako FMA Kiholo Bay FMA Waikiki/Diamond Head FMA	Resource Allocation/ Fishing	Sustain aquatic resources for fishing Reduce by-catch where it is high Reduce habitat damage from fishing Manage over-fishing where it occurs	Conflicts between different types of fisheries Special rules needed to sustain one or more fisheries due to intensive fishing pressure or fragile habitat	Resolve fishing gear/group conflicts Allocate resources by gear type/group or by sub zones within FMA Recreation/subsistence fishing allowed Commercial harvest may be prohibited Gear type/bag limits may be restricted Some non-consumptive recreation allowed Regulate commercial uses if needed to avoid impacts to resources or to public uses of resources	Yes	Yes with Regulations
Public Fishing Area (PFA) Waiakea	Fishing	Sustain aquatic resources for fishing Increase stocks by habitat enhancement or fish stocking programs	Conflicts between fishers & other aquatic resource users High values for one or more types of fishing Low requirement for special conservation rules Fishing in area historically occurred and popular Areas with high productivity due to oceanographic or habitat characteristics Artificial reefs, fishing piers, or stocking programs High potential for successful fishery enhancement	Resolve user conflicts to favor fishing Improve quality of fishing experience Discourage interference with fishing Regulate commercial uses if needed to protect resources or fishing	Yes	Yes with Regulations

ADDITIONAL INPUT NEEDED TO IMPROVE EFFECTIVENESS

Several very challenging questions remain to be answered as DLNR works with scientists, user groups and the public to improve the effectiveness of existing and prospective marine managed areas in Hawaii.

- What is the distribution and abundance of habitat types in an area that are essential to support the species assemblages intended to be protected?

- What are the habitat requirements, life histories and movement patterns of marine species most affected by human activities?

- Where and when do fish spawning aggregations occur and what are the habitat characteristics of these spawning sites?

- What is the minimum size a managed area needs to be given the conservation and human use goals for the area? The minimum effective size depends on the management goals and the daily and seasonal movements of the species assemblages to be protected, which is often related to the distribution and abundance of habitat types within the area.

- How far apart can the managed areas be from one another and function as a network that is biologically connected? This requires consideration of larger-scale oceanographic processes, smaller-scale coastal oceanography, and larval behavior which are all poorly understood.

- What are the movement patterns of adult marine organisms and their degree of site fidelity? This knowledge is essential to understand the degree to which adults may move out of a marine managed area into areas open to fishing.

- To what extent is each important habitat and ecosystem type already protected in marine managed areas?

- What important gaps exist in Hawaii's resource protection that may compromise the long-term conservation of marine ecosystems, habitats and species?

- What proportion of each habitat type and ecosystem should receive the highest level of protection from human impacts to provide the necessary insurance against resource management failures, environmental catastrophes or major episodic events such as mass coral bleaching or disease?

- In order to assure some resilience of the diverse habitats and ecosystems found throughout the islands, what proportion of areas should be set aside for future generations to insure there are plenty of fish for the future?

As more research is completed to help answer these important questions, we will be able to refine the boundaries of the existing and prospective marine managed areas to better ensure they achieve their management goals, as well as fill in critical gaps in ecosystem protection and user conflicts.

RECOMMENDATION:

It is the recommendation of DLNR-DAR, that the Board of Land and Natural Resources:

1. Approve the proposed definitions of marine protected areas and marine managed areas, in concept;

2. Approve, in concept, the suggested framework; and

3. Authorize the Department to hold conduct a public process, including public meetings, to seek additional input, with significant stakeholder participation, into the proposed definitions and marine managed area framework and report back to the BLNR within six months on the status of this effort.

Respectfully Submitted,

Francis Oishi
Acting Administrator

APPROVED FOR SUBMITTAL:

Peter T. Young
Chairperson